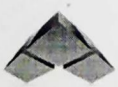
BRUHATH BANGALORE MAHANAGARA PALIKE
BYATARAYANAPURA DIVISION

Name of the Project

Improvements Roads From NH-07 to Sanjeevininagar Up to Hebbala Sarovara Layout In Ward No 07 And Ward No 08 In Kodigehalli Sub Division.

TEST REPORTS

FIRST AND FINAL BILL



TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
No.58 MIG, 6th Cross, 3rd Main
1st Stage, Basaveshwaranagar
Bangalore-560079
[080 - 23287532
email: tejusconsultants@gmail.com

TEJUS
CONSULTANTS

No. EE/ BYT-PMC / 769 / 22-23

Date: 20-02-2023

To
The Executive Engineer
Byatarayanapura Division
Bruhat Bangalore Mahanagara Palike
Bangalore – 560 092

Dear Sir

Sub: **Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division..**

In reference to the above subject, this is to bring to your kind notice that we have scrutinized the **First and Final bill** submitted by **M/S SMLP Asphalts (B B Umesha) towards** the above said work and arrived at an amount of **1,02,81,238.07/-(Rupees One Crore Two Lakh Eighty One Thousand Two Hundred Thirty Eight And Seven Paise Only)** the work has been completed satisfactorily.

This is for your kind information.

Thank you and assuring you the best of our Services at all the times

TEJUS CONSULTANTS

For Tejus Consultants
(Nischal M)

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT

Clients	Bruhath Bangalore Mahanagara Palike
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size	**Proposed Use**	PCC
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD RHS	**Date of Sampling**	28-11-2022
		Date of Testing	29-11-2022

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	88	88	2.93	97.07	95-100
20.00mm	1376	1464	48.80	51.20	30-70
10.00mm	974	2438	81.27	18.73	10-35
4.75mm	458	2896	96.53	3.47	0-5
Pan	104	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

Note:

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3. Any Query regarding the report must be reported reported within 15days from the date of testing.
4. The material used in the site satisfied the standard of MORTH's 5th revision and hence can be used in the work.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

TEJUS CONSULTANTS

Authorised Signatory

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TEST REPORT	
Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	M sand	Proposed Use	PCC
Location/Source	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD	Date of Sampling	28-11-2022
Period of Soaking	24 hours	Date of Testing	29-11-2022

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	652	636	665	
B	Weight of oven - dry sample gm.	643	629	657	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1686	1673	1692	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.668	2.643	2.649	2.653
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.400	1.113	1.218	1.243

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BBMP, Bangalore

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	M sand	**Proposed Use**	PCC
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD	**Date of Sampling**	29-11-2022
		Date of Testing	29-11-2022

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	212	212	7.07	92.93	90 - 100
2.36 mm	324	536	17.87	82.13	75 - 100
1.18 mm	438	974	32.47	67.53	55 - 90
0.600 mm	493	1467	48.90	51.10	35 -59
0.300 mm	754	2221	74.03	25.97	8-30
0.150 mm	616	2837	94.57	5.43	0 - 10
Pan	163	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Test Report on Cement

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	29-11-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	98 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	498 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	25 % to 35

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Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	B.B Umesha (M/s SMLP Asphalts)				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	20 mm down size		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	29-11-2022	
			Date of Testing	30-11-2022	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
40.00 mm	0	0	0	100	100
20.00 mm	277	277	2.77	97.23	95 - 100
10.00 mm	4716	4993	49.93	50.07	25 - 55
4.75 mm	4311	9304	93.04	6.96	0 - 10
Pan	696	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	B.B Umesha (M/s SMLP Asphalts)				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	**12.5 mm down size**		**Proposed Use**	CONCRETE	
Sample Location	At Plant		**Date of Sampling**	29-11-2022	
			Date of Testing	30-11-2022	
IS Sieve Size (in mm)	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
20.0	0	0	0	100	100
12.5	499	499	4.99	95.01	90-100
10.0	4526	5025	50.25	49.75	40-85
4.75	4381	9406	94.06	5.94	0-10
Pan	594	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	M sand	**Proposed Use**	concrete
Location/Source	At Plant	**Date of Sampling**	29-11-2022
Period of Soaking	24 hours	**Date of Testing**	30-11-2022

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	650	661	632	
B	Weight of oven - dry sample gm.	642	653	623	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1681	1689	1674	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.631	2.644	2.674	2.650
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.246	1.225	1.445	1.305

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Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

TEJUS CONSULTANTS
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Test Report on Cement

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	30-11-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	106 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	486 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	7 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	25 % to 35

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Assistant Executive Engineer
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BBMP, Bangalore

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TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	:	Bruhat Bengaluru Mahanagara Palike
Contractor	:	B.B Umesha (M/s SMLP Asphalts)
Consultant	:	Tejus Consultants, Bangalore
Date of Testing	:	30-11-2022
Techinical Reference	:	IS 1786:2008, IS1608:2005, IS1599:1985(Reaffirmed2006)
Sample Identification	:	8mm, 10mm, 12mm TMT Fe500 Bars

Sl. No.	Nominal size dia in mm)	Mass per metre (kg/m)	TENSILE STRENGTH		
			0.20% proof stress/yield stress N/mm2	Tensile strength N/mm2 '	Elongation,percent on gauge length
1	8	0.397	515	551	15
2	10	0.618	533	577	16
3	12	0.889	543	588	17

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Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

TEJUS CONSULTANTS

Consultant's Representative

TEJUS
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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SIEVE ANALYSIS

Total Weight:	3000 gms			
Type of Material	M sand	Proposed Use	concrete	
Sample Location	At Plant	Date of Sampling	30-11-2022	
		Date of Testing	30-11-2022	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	205	205	6.83	93.17	90 - 100
2.36 mm	331	536	17.87	82.13	75 - 100
1.18 mm	446	982	32.73	67.27	55 - 90
0.600 mm	488	1470	49.00	51.00	35 -59
0.300 mm	692	2162	72.07	27.93	8-30
0.150 mm	631	2793	93.10	6.90	0 - 10
Pan	207	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS CONSULTANTS

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	:	Bruhat Bengaluru Mahanagara Palike
Contractor	:	B.B Umesha (M/s SMLP Asphalts)
Consultant	:	Tejus Consultants, Bangalore
Date of Testing	:	02-12-2022
Techinical Reference	:	IS 1786:2008, IS1608:2005, IS1599:1985(Reaffirmed2006)
Sample Identification	:	8mm, 10mm, 12mm TMT Fe500 Bars

Sl. No.	Nominal size dia in mm)	Mass per metre (kg/m)	TENSILE STRENGTH		
			0.20% proof stress/yield stress N/mm2	Tensile strength N/mm2 '	Elongation,percent on gauge length
1	8	0.397	520	568	15
2	10	0.619	536	578	16
3	12	0.889	548	591	17

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Consultant's Representative

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TEST REPORT

Clients	Bruhath Bangalore Mahanagara Palike
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size	**Proposed Use**	PCC
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD RHS	**Date of Sampling**	02-12-2022
		Date of Testing	03-12-2022

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	79	79	2.63	97.37	95-100
20.00mm	1389	1468	48.93	51.07	30-70
10.00mm	967	2435	81.17	18.83	10-35
4.75mm	454	2889	96.30	3.70	0-5
Pan	111	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT	
Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	M sand	Proposed Use	PCC
Location/Source	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD	Date of Sampling	02-12-2022
Period of Soaking	24 hours	Date of Testing	03-12-2022

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.		661	644	667	
B	Weight of oven - dry sample gm.		652	635	659	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1691	1678	1694	
E	Bulk specific gravity	B / (C + A - D)	2.661	2.635	2.657	2.651
G	Absorption (%)	(A - B) *100 / B	1.380	1.417	1.214	1.337

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TEST REPORT	
Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	**M sand**	**Proposed Use**	PCC
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD	**Date of Sampling**	03-12-2022
		Date of Testing	03-12-2022

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	215	215	7.17	92.83	90 - 100
2.36 mm	314	529	17.63	82.37	75 - 100
1.18 mm	417	946	31.53	68.47	55 - 90
0.600 mm	486	1432	47.73	52.27	35 -59
0.300 mm	754	2186	72.87	27.13	8-30
0.150 mm	624	2810	93.67	6.33	0 - 10
Pan	190	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Cement

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	03-12-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	108 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	468 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	7 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	25 % to 35

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TEJUS CONSULTANTS

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	B.B Umesha (M/s SMLP Asphalts)				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	20 mm down size	**Proposed Use**	Concrete	
Sample Location	At Plant	**Date of Sampling**	05-12-2022	
		Date of Testing	06-12-2022	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	252	252	2.52	97.48	95 - 100
10.00 mm	4787	5039	50.39	49.61	25 - 55
4.75 mm	4338	9377	93.77	6.23	0 - 10
Pan	623	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	B.B Umesha (M/s SMLP Asphalts)				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	**12.5 mm down size**		**Proposed Use**	CONCRETE	
Sample Location	At Plant		**Date of Sampling**	05-12-2022	
			Date of Testing	06-12-2022	
IS Sieve Size (in mm)	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
20.0	0	0	0	100	100
12.5	583	583	5.83	94.17	90-100
10.0	4513	5096	50.96	49.04	40-85
4.75	4462	9558	95.58	4.42	0-10
Pan	442	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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BBMP, Bangalore

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	M sand	**Proposed Use**	concrete
Location/Source	At Plant	**Date of Sampling**	05-12-2022
Period of Soaking	24 hours	**Date of Testing**	06-12-2022

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	657	669	646	
B	Weight of oven - dry sample gm.	649	662	636	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1689	1695	1682	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.671	2.659	2.661	2.664
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.233	1.057	1.572	1.287

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Consultants	Tejus Consultants, Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)

SIEVE ANALYSIS

Total Weight:	3000 gms			
Type of Material	M sand	**Proposed Use**	concrete	
Sample Location	At Plant	**Date of Sampling**	06-12-2022	
		Date of Testing	06-12-2022	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	228	228	7.60	92.40	90 - 100
2.36 mm	343	571	19.03	80.97	75 - 100
1.18 mm	414	985	32.83	67.17	55 - 90
0.600 mm	459	1444	48.13	51.87	35 -59
0.300 mm	753	2197	73.23	26.77	8-30
0.150 mm	641	2838	94.60	5.40	0 - 10
Pan	162	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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Test Report on Cement

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	06-12-2022
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	110 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	448 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	30.00%	25 % to 35

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Assistant Executive Engineer
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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 122 RHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Raft)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	01-12-2022	08-12-2022	7 days	8.155	22500	311	13.82	13.76
2	01-12-2022	08-12-2022	7 days	8.162	22500	310	13.78	
3	01-12-2022	08-12-2022	7 days	8.175	22500	308	13.69	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 168 LHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Raft)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	03-12-2022	10-12-2022	7 days	8.165	22500	313	13.91	13.79
2	03-12-2022	10-12-2022	7 days	8.155	22500	310	13.78	
3	03-12-2022	10-12-2022	7 days	8.175	22500	308	13.69	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 336 RHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Wall)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	04-12-2022	11-12-2022	7 days	8.182	22500	310	13.78	
2	04-12-2022	11-12-2022	7 days	8.155	22500	305	13.56	13.67
3	04-12-2022	11-12-2022	7 days	8.162	22500	308	13.69	

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PRECAST SLAB (CORE) TEST REPORT

Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	B.B Umesha (M/s SMLP Asphalts)
Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
No.of Sample Tested	:	1
Date of Testing	:	12-12-2022
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M25_250mm Thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (KN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	100.00	180.00	3.600	2546.48	1.80	0.960	197.23	25.11	27.12	26.04	32.55
2	100.00	180.00	3.594	2542.23	1.80	0.960	196.58	25.03	27.03	25.95	32.44
3	100.00	180.00	3.589	2538.70	1.80	0.960	197.11	25.10	27.10	26.02	32.53

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TEJUS CONSULTANTS

Consultant's Representative

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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PRECAST SLAB (CORE) TEST REPORT

Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	B.B Umesha (M/s SMLP Asphalts)
Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
No.of Sample Tested	:	1
Date of Testing	:	12-12-2022
Technical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{25} 100mm thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	90.00	0.478	2704.93	1.80	0.960	49.32	25.12	27.13	26.04	32.55
2	50.00	90.00	0.475	2687.95	1.80	0.960	49.28	25.10	27.11	26.02	32.53
3	50.00	90.00	0.482	2727.56	1.80	0.960	49.56	25.24	27.26	26.17	32.71

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Consultant's Representative

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 252 LHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Wall)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	06-12-2022	13-12-2022	7 days	8.155	22500	312	13.87	13.76
2	06-12-2022	13-12-2022	7 days	8.145	22500	310	13.78	
3	06-12-2022	13-12-2022	7 days	8.165	22500	307	13.64	

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PRECAST SLAB (CORE) TEST REPORT

Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	B.B Umesha (M/s SMLP Asphalts)
Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
No.of Sample Tested	:	2
Date of Testing	:	16-12-2022
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{25} . 100mm thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	90.00	0.489	2767.17	1.80	0.960	49.56	25.24	27.26	26.17	32.71
2	50.00	90.00	0.481	2721.90	1.80	0.960	49.10	25.01	27.01	25.93	32.41
3	50.00	90.00	0.493	2789.81	1.80	0.960	49.23	25.07	27.08	26.00	32.49

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD Culvert Raft

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	09-12-2022	16-12-2022	7 days	8.146	22500	312	13.87	13.88
2	09-12-2022	16-12-2022	7 days	8.159	22500	315	14.00	
3	09-12-2022	16-12-2022	7 days	8.176	22500	310	13.78	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD Culvert Wall

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	12-12-2022	19-12-2022	7 days	8.155	22500	309	13.73	13.75
2	12-12-2022	19-12-2022	7 days	8.169	22500	311	13.82	
3	12-12-2022	19-12-2022	7 days	8.177	22500	308	13.69	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 122 RHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Raft)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	01-12-2022	29-12-2022	28 days	8.160	22500	485	21.56	21.42
2	01-12-2022	29-12-2022	28 days	8.175	22500	486	21.60	
3	01-12-2022	29-12-2022	28 days	8.180	22500	475	21.11	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 168 LHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Raft)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	03-12-2022	31-12-2022	28days	8.201	22500	488	21.69	21.64
2	03-12-2022	31-12-2022	28days	8.195	22500	491	21.82	
3	03-12-2022	31-12-2022	28days	8.185	22500	482	21.42	

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4. The material used in the site satisfied the standard of MORTH's 5th revision and hence can be used in the work.

TEJUS CONSULTANTS

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

TEJUS
CONSULTANTS

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 336 RHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Wall)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	04-12-2022	01-01-2023	28days	8.163	22500	482	21.42	21.59
2	04-12-2022	01-01-2023	28days	8.146	22500	485	21.56	
3	04-12-2022	01-01-2023	28days	8.199	22500	490	21.78	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	Ch 252 LHS 2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD (For Drain Wall)

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	06-12-2022	03-01-2023	28days	8.164	22500	489	21.73	21.48
2	06-12-2022	03-01-2023	28days	8.174	22500	485	21.56	
3	06-12-2022	03-01-2023	28days	8.188	22500	476	21.16	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD Culvert Raft

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	09-12-2022	06-01-2023	28days	8.185	22500	488	21.69	21.53
2	09-12-2022	06-01-2023	28days	8.174	22500	479	21.29	
3	09-12-2022	06-01-2023	28days	8.169	22500	486	21.60	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	B.B Umesha (M/s SMLP Asphalts)
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959
Sample Location	2ND CROSS ROAD SHANTIVANA FROM BARRIES ROAD Culvert Wall

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	12-12-2022	09-01-2023	28days	8.169	22500	486	21.60	21.69
2	12-12-2022	09-01-2023	28days	8.178	22500	488	21.69	
3	12-12-2022	09-01-2023	28days	8.185	22500	490	21.78	

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GRADATION FOR GSB
(As per MORT&H 400-1,Grading-II)

Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants, Bangalore
Contractor	:	B.B.Umesh (M/S SMLP Asphalts)
Date of Testing	:	03-02-2023
Type of Mix	:	GSB
Sample I/D	:	GSB1

Sample Location:	Cross road NTI layout	**Date of Sampling:**	02-02-2023
		Date of testing:	03-02-2023
Type of material & Purpose:	GSB	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
75	0	0	0.00	100.00	-
53	0	0	0.00	100.00	100.00
26.5	2168	2168	21.68	78.32	70-100
9.5	2316	4484	44.84	55.16	50-80
4.75	955	5439	54.39	45.61	40-65
2.36	1355	6794	67.94	32.06	30-50
0.425	1988	8782	87.82	12.18	10-15
0.075	836	9618	96.18	3.82	<5
Pan	382.0				
Total	10000.0				

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Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants, Bangalore
Contractor	B.B.Umesh (M/S SMLP Asphalts)

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28))

Date of Testing	**04-02-2023**		
Layer no. or level	GSB layer		
Depth of hole	150mm		
Field density:	1	2	2
Chainage	**Cross road NTI layoutCh:38**	**Cross road NTI layoutCh:54**	**Cross road NTI layoutCh:91**
Wt. of wet material from hole (Ww) gms.	5981	5976	5993
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10580	10579	10576
Wt. of sand in hole+ cone (w3) gms.	4420	4421	4424
Wt. of cone gms.	1080	1080	1080
Wt. of sand gms.	3340	3341	3344
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36	2.37
Moisture meter reading(moisture content)	6.50	6.40	6.40
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.22	2.22	2.22
MDD	2.25	2.25	2.25
OMC	6.30%	6.30%	6.30%
% compaction obtained	98.64	98.62	98.82
% compaction required	98%	98%	98%

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Kodigehalli Sub Division
BBMP, Bangalore

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Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B B Umesha(M/S SMLP Asphalts)

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	Date of Sampling	06-02-2023
Sample Location	Cross road NTI layout	Date of Testing	07-02-2023

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	358.00	364.00	375.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	272.00	273.00	279.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	86.00	91.00	96.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.02	25.00	25.60	
5	Average Aggregate impact value	(%)	24.87			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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Kodigehalli Sub Division
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Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B.Umesh (M/S SMLP Asphalts)

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material		WMM		**Proposed Use**	**WMM**
Sample Location		Cross road NTI layout		**Date of Sampling**	**06-02-2023**
				Date of Testing	**07-02-2023**
Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	615	84	531	76
16.0	12.5	1132	123	992	109
12.5	10.0	782	64	715	65
10.0	6.3	613	54	562	47
Total		**3142**	**325**	**2800**	**297**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.34
Elongation Index(%):	10.61
Combined FI+EL (%)	20.95

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Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	B.B.Umesh (M/S SMLP Asphalts)
Date of Testing	:	07-02-2023
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	Cross road NTI layout	Date of Sampling:	06-02-2023
		Date of testing:	07-02-2023
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	382	382	3.82	96.18	95-100
22.4	1778	2160	21.60	78.40	60-80
11.2	2262	4422	44.22	55.78	40-60
4.75	1994	6416	64.16	35.84	25-40
2.36	1391	7807	78.07	21.93	15-30
0.6	772	8579	85.79	14.21	8.0-22.0
0.075	878	9457	94.57	5.43	0-8
Pan	543	10000			
Total	10000.0				

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Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	B.B.Umesh (M/S SMLP Asphalts)	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**08-02-2023**
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Chainage	**Cross road NTI layout at Ch: 42**	**Cross road NTI layout at Ch: 93**
Wt. of wet material from hole (Ww) gms.	5988	5975
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10590	10591
Wt. of sand in hole+ cone (w3) gms.	4410	4409
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3330	3329
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.37	2.37
Moisture meter reading(moisture content)	6.40	6.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.23	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.28	98.28
% compaction required	98%	98%

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ent	Bruhat Bengaluru Mahanagara Palike
nsultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
ntractor	B.B.Umesh (M/S SMLP Asphalts)

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

posed Use	DBM	Date of Sampling	12-02-2023
mple cation	At plant	Date of Testing	12-02-2023

No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	361.00	378.00	357.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	282.00	284.00	277.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	79.00	94.00	80.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	21.88	24.87	22.41	
5	Average Aggregate impact value	(%)	23.05			Max - 30 %

narks : ✓ Satisfactory / Not Satisfactory

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Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B.Umesh (M/S SMLP Asphalts)

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material		DBM		**Proposed Use**	**DBM**
Sample Location		At plant		**Date of Sampling**	**12-02-2023**
				Date of Testing	**12-02-2023**
Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	7815	671	7151	405
31.5	25.0	4232	207	4053	209
25.0	20.0	2154	263	2165	246
20.0	16.0	1568	346	460	278
16.0	12.5	548	165	460	202
12.5	10.0	487	53	426	92
10.0	6.3	132	91	56	62
Total		**16936**	**1796**	**14771**	**1494**

Results

Flakiness Index(%):	10.60
Elongation Index(%):	10.11
Combined FI+EL (%)	20.72

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TEJUS CONSULTANTS

Consultant's Representative

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE BITUMINOUS MACADAM MIX

Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	B.B.Umesh (M/S SMLP Asphalts)
Date of Testing	:	14-02-2023
Type of Mix	:	DBM
Sample I/D	:	DBM-1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	884	928
2. Weight of Mixture after extraction, g	846	888
3. Weight of Bitumen	38	40
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.00	4.00
6. Weight of fines, g	2.00	2.00
7. Weight of Bitumen & fines	40.00	42.00
8. Bitumen content in %	4.52	4.53
9. Average Bitumen content in %	4.53	
10. Minimum Bitumen content in %	4.50	

GRADATION FOR DBM AFTER EXTRACTION

(As per MORT&H 500-10,Grading-2)

Sample Location:	Cross road NTI layout	**Date of Sampling:**	14-02-2023
		Date of testing:	14-02-2023
Type of material & Purpose:	DBM	**Oven Dry Wt.(gms):**	846

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0.0	0.0	0.00	100.00	100.00
26.50	62.0	62.0	7.33	92.67	90-100
19.00	122.0	184.0	21.75	78.25	71-95
13.20	111.0	295.0	34.87	65.13	56-80
4.750	155.0	450.0	53.19	46.81	38-54
2.360	105.0	555.0	65.60	34.40	28-42
0.300	146.0	701.0	82.86	17.14	7-21
0.075	92.0	793.0	93.74	6.26	2-8
Pan	53.0	846.0			
Total	846.0				

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Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

TEJUS CONSULTANTS

Consultant's Representative

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Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	B.B.Umesh (M/S SMLP Asphalts)
Date of Testing	:	14-02-2023
Type of Mix	:	Tack coat DBM
Sample I/D	:	1
Sample Location		Cross road NTI layout

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No		
		1	3	2
Chainage		**Ch 28**	**Ch 52**	**Ch 87**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.788	0.781	0.773
Final weight of plate after application of tack Coat (c)	Kg	0.811	0.804	0.796
Weight of tack coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.253	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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roject	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
lient	Bruhat Bengaluru Mahanagara Palike
onsultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
ontractor	B.B.Umesh (M/S SMLP Asphalts)

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

roposed Use	BC	Date of Sampling	15-02-2023
ample Location	At plant	Date of Testing	15-02-2023

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	368.00	373.00	381.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	279.00	288.00	291.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	89.00	85.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.18	22.79	23.62	
5	Average Aggregate impact value	(%)		23.53		Max - 30 %

emarks : Satisfactory / Not Satisfactory

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Project	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	B.B.Umesh (M/S SMLP Asphalts)

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC		**Proposed Use**	BC
Sample Location	At plant		**Date of Sampling**	15-02-2023
			Date of Testing	15-02-2023

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	955	85	932	71
16.0	12.5	1326	117	1265	122
12.5	10.0	432	76	432	55
10.0	6.3	488	65	448	62
Total		**3201**	**343**	**3077**	**310**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.72
Elongation Index(%):	10.07
Combined FI+EL (%)	20.79

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work	:	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	B.B.Umesh (M/S SMLP Asphalts)
Date of Testing	:	16-02-2023
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	885	911
2. Weight of Mixture after extraction, g	839	863
3. Weight of Bitumen	46	48
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	48.10	49.85
8. Bitumen content in %	5.44	5.47
9. Average Bitumen content in %	**5.45**	
10. Minimum Bitumen content in %	**5.40**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-17,Grading-2)

Sample Location:	Cross road NTI layout	Date of Sampling:	16-02-2023
		Date of testing:	16-02-2023
Type of material & Purpose:	**BC**	Oven Dry Wt.(gms):	839.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	66	66.0	7.87	92.13	90 - 100
9.50	112	178.0	21.22	78.78	70 - 88
4.75	105	283.0	33.73	66.27	53 - 71
2.360	125	408.0	48.63	51.37	42 - 58
1.180	109	517.0	61.62	38.38	34 - 48
0.600	95	612.0	72.94	27.06	26 - 38
0.300	48	660.0	78.67	21.33	18 - 28
0.150	45	705.0	84.03	15.97	12 - 20
0.075	65	770.0	91.78	8.22	4 - 10
Pan	69.0	839.0			
Total	839.0				

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements Roads From NH-07 to Sanjeevininagar up to Hebbala Sarovara layout in ward no 07 and ward No 08 in kodigehalli sub division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	B.B.Umesh (M/S SMLP Asphalts)
Date of Testing :	16-02-2023
Type of Mix :	Tack coat
Sample I/D :	1
Location :	Cross road NTI layout

Determination	Unit	Test No		
		1	2	3
Location :		**Ch 24**	**Ch 53**	**Ch 93**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.785	0.756	0.769
Final weight of plate after application of tack Coat (c)	Kg	0.808	0.779	0.792
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.252	0.253	0.250
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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Authorised Signatory

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